

LAWN CARE PESTICIDE USE IN NEW JERSEY: 1990 SURVEY

Introduction

The New Jersey Pesticide Control Program (NJPCP) began a series of pesticide use surveys in 1985. These surveys address pesticide use in the state of New Jersey for agriculture, golf courses, termite control, right-of-way, mosquito control, and lawn care. The lawn care survey targets pesticides used for lawn care purposes. This report focuses on the first survey completed in the lawn care series (1990).

All statewide pesticide use surveys are performed under the authority of the New Jersey Pesticide Control Code, N.J.A.C. 7:30-1 et.seq., requiring applicators to maintain pesticide records for two years and to submit use records to the state when requested. This regulative authority provides an accuracy and level of response that is difficult to duplicate in a voluntary, nationwide survey. In fact, these New Jersey surveys almost represent a pesticide usage census rather than a probabilistic survey.

The information collected from the NJPCP pesticide use surveys is used by agencies within the NJ Department of Environmental Protection along with other state agencies to aid in research, exposure management and monitoring efforts in areas such as ground water protection, farm worker protection and education, and residual pesticide sampling. The survey data are also entered into state and federal geographical information systems for geographical distribution.

Methods

The NJPCP's registration records were used to identify all 4142 licensed commercial applicators holding a category "3B" (turf) on his or her license. Surveys were mailed over an eight month period in 1991, the first mailing going to all New Jersey registered pesticide businesses with a responsible applicator holding a 3B category on his or her license. A second mailing went to all 3B applicators and a third mailing went out (uncertified) to non-respondents. Survey forms were mailed along with return envelopes and instructional letters asking for 1990 lawn care pesticide use. Lists of 3B businesses and applicators were kept in the office and marked off as surveys returned.

The survey requested information on each pesticide product used. This included trade name, EPA registration number, percent active ingredient, amounts applied and number of acres treated.

Survey information was entered into a database file. This information file was then merged with a second database that linked chemical names with trade names, and a subprogram converted total amounts of formulated product to total amounts of active ingredient (lbs ai).

Results

Once all three mailings were completed, 2668 out of 3472 (77%) applicators were accounted for. Due to this lower than desired return rate, the third mailing for future surveys will go out certified.

Table 1 lists the chemicals and their respective amounts appearing in the survey.

Table 2 selects out the highest use compounds.

In reporting and evaluating pesticide use, it is important to consider the many, diverse influences on pesticide use. No single factor, or even set of factors, can completely account for fluctuations in the amounts of pesticide active ingredients used from survey to survey. Weather conditions such as temperature and rainfall, in terms of duration, timing and amounts or degrees, influence pest pressure and the associated response. In agricultural settings, issues such as cropping patterns and the associated pest impacts vary from year to year. Economic factors play a significant role, ranging from crop demand to golf course playability to product and/or service cost. The changing face of land use also plays a part. While agricultural acreage has been declining, new home building starts and the associated lawns around those new homes have been increasing.

Another factor is the adoption of IPM (Integrated Pest Management). Short term, some pest control situations may require increased pesticide applications beyond the alternative means contained in an IPM program. Long term, however, IPM should result in overall pesticide use reduction. This may be confounded by the increased use of reduced-risk alternatives that may have higher application rates than the materials they replace.

[Curt Brown, RSII] revised 2/02

Table 1. Pesticide amounts (lbs active ingredient) reported in the New Jersey 1990 Lawn Care Pesticide Use Survey.

HERBICIDES:

2,4-D	321990
2,4-DP	22810
Amitrole	5
Ammonium Sulfamate	81
Benfluralin	28373
Bensulide	8043
Bentazon	13202
Bromacil	61
Bromoxynil	15
Chlorthal-Dimethyl	6429
Dalapon	6
Dicamba	34796
Dichlorbenil	82
Diquat	21
DSMA	646
Endothal	16
EPTC	1
Ethofumesate	32
Fenoxaprop-ethyl	217
Fluazifop-butyl	<1
Glyphosate	14468
Imazapyr	159
Imazethapyr	<1
Isoxaben	77
MCPA	15200
Mecoprop	78618
Metalochlor	122
Metsulfuron	<1
MSMA	3311
Naphtha	19
Oryzalin	1847
Oxadiazon	350
Oxyfluorfen	<1
Paraquat	48
Pendimethalin	152646
Picloram	4
Prometon	746
Sethoxydim	2
Siduron	2299
Simazine	647
Sodium arsenate	23

Sodium chlorate	450
Sodium metaborate	1020
Sulfometuron	150
Tebuthiuron	6
Triclopyr	46816
Trifluralin	12289
TOTAL HERBICIDES:	768143

INSECTICIDES:

Acephate	53
Bendiocarb	1518
Bt	1
Carbaryl	22984
Chlorpyrifos	22111
Cyfluthrin	100
Cypermethrin	1
Diazinon	11547
Dicofol	19
Dimethoate	5
Disulfoton	2
Ethoprop	221
Fenvalerate	<1
Fluvalinate	2
Isazofos	4465
Isofenphos	15276
Lindane	4
Malathion	28
Methoxychlor	10
Milky spore	<1
Oil	2128
Soap	71
Trichlorfon	34794
TOTAL INSECTICIDES:	115340

FUNGICIDES:

Anilazine	1302
Benomyl	1919
Chloroneb	20
Chlorothalonil	5986
Clopyralid	173
Fenarimol	52
Fosetyl-al	79
Iprodione	6301
Mancozeb/Maneb	2625
Metalaxyl	294
PMA	2
Propamocarb HCL	477
Propiconazole	116
Quintozene	275
Thiophanate-methyl	500
Thiram	244
Triadimefon	1379
Vinclozolin	74
TOTAL FUNGICIDES:	21818

GROWTH HORMONES:

Amidochlor	1
Flurprimidol	65
Maleic Hydrazide	<1
Mefluidide	174
TOTAL HORMONES:	240

TOTAL PESTICIDE USE: **905541**

Herbicides:	85%
Insecticides:	13%
Fungicides:	2%
Growth Hormones:	<1%

Table 2. Highest use compounds from the main pesticide categories. Shown are compounds $\geq 5\%$ of category.

Compound	Lbs active ingredient	% of category	% of total use
HERBICIDES:			
2,4-D	321990	42%	35.6%
Pendimethalin	152646	20%	16.9%
Mecoprop	78618	10%	8.7%
Triclopyr	46816	6%	5.2%
Dicamba	34796	5%	3.8%
INSECTICIDES:			
Trichlorfon	34794	30%	3.8%
Carbaryl	22984	20%	2.5%
Chlorpyrifos	22111	19%	2.4%
Isofenphos	15276	13%	1.7%
Diazinon	11547	10%	1.3%
FUNGICIDES:			
Iprodione	6301	29%	0.7%
Chlorothalonil	5986	27%	0.7%
Mancozeb/Maneb	2625	12%	0.3%
Benomyl	1919	9%	0.2%
Triadimefon	1379	6%	0.2%
Anilazine	1302	6%	0.1%